

REMARKS

This is in response to the Office Action of March 9, 2006 in which all pending claims were rejected. With this response claims 17, 18, 20, 25, 31, 34, 39 and 43-45 are amended, claims 26, 29, 32 and 35 are canceled and all pending claims 17-20, 25, 31, 34, 37, 39 and 43-45 are presented for consideration and favorable action.

In the Office Action, the Examiner objected to the language in claims 17 and 25 due to typographical errors. Those claims have been amended and the objection may be withdrawn.

In the remainder of the Office Action, the claims were rejected under 35 U.S.C. § 103 based upon Carsella et al. (US 6,626,038) in view of a number of other references. With this response, independent claim 17 is amended and it is believed to clearly distinguish the present invention from the cited references.

Independent claim 17 includes estimating a fiducial pulse amplitude related to a reflected wave pulse from an interface between the antenna and the first material and estimating a first pulse amplitude related to a reflected wave pulse from a first material interface between the first material and a second material. It is believed that the cited references do not show the claimed estimation. Further, independent claim 17 includes setting a fiducial threshold value based upon the estimated fiducial pulse amplitude and setting a first threshold value based upon the estimated first pulse amplitude. It is believed that this also is not shown by the cited references. Therefore, the rejections may be withdrawn.

Further, Applicant notes that the dependent claims include many additional elements which are not shown or suggested by the references when read in context with the claims from which they depend. For example, the dependent claims include the use of attenuation and range factors, the calculation of a dielectric

parameter (claim 20), and the use of temperature in setting the threshold value (claim 45). Further, the dielectric constants are received from an operator or from the process control loop (claims 43 and 44).

In view of the above amendments and remarks, it is believe that the present application is in condition for allowance. Such action is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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